This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for deriving an objective sharpness metric for determining the sharpness quality level of video sequences having different degrees of sharpness, comprising the following steps:

receiving as an input an original video sequence;

processing the original video sequence to derive a sharpness video sequence;

calculating spectral energy information in [[a]] said sharpened video sequence for which a sharpness quality score is desired~~, said sharpness video sequence being derived from an original video sequence~~;

calculating spectral energy information in said original video sequence;

calculating false edge information data in said sharpened video sequence; and

deriving said objective sharpness metric from said spectral energy information and said false edge information, said objective sharpness metric providing an objective sharpness quality score representative of the quality of said sharpened video sequence.

2. (Original) The method of claim 1, wherein the step of calculating false edge information in said sharpened video sequence further comprises calculating a total number of false edges in said sharpened video sequence.

3. (Original) The method of claim 2, wherein said step of calculating the total number of false edges in said sharpened video sequence comprises the steps of:

determining whether said number of false edges exceeds a first threshold; and

computing said sharpness quality score from said spectral energy information and said total number of false edges.

4. (Original) The method of claim 2, wherein the step of calculating said total number of false edges in said sharpened video sequence, further comprises the steps of:

creating a first edge map in said original video sequence;

creating a second edge map in said sharpened video sequence; and

comparing said first and second edge maps to determine said total number of false edges in said sharpened video sequence.

5. (Original) The method of claim 1, wherein the step of calculating spectral energy information in said original sequence further comprises the steps of:

determining the frequency spectrum of said original video sequence; and

computing a normalized fourier transform of said original video sequence from said frequency spectrum.

6. (Original) The method of claim 1, wherein the step of calculating spectral energy information in said sharpened sequence further comprises the steps of:

determining the frequency spectrum of said sharpened video sequence;

dividing the frequency spectrum into at least a first and a second sub-band;

computing a first normalized fourier transform of said sharpened video sequence in said at least first sub-band;

computing a second normalized fourier transform of said sharpened video sequence in said at least second sub-band; and

using said first and second normalized fourier transforms to derive said objective sharpness metric.

7. (Orignal) The method of claim 6, wherein the first and second fourier transforms are one of a horizontal and vertical transform.

8. (Currently Amended) A system for optimizing the sharpness quality level of a received video sequence, comprising:

means for receiving an original video sequence; and

a processor comprising:

means for applying a sharpness enhancement function to said original video sequence to generate a sharpened video sequence; and

means for optimizing the sharpness quality level of said received video sequence using at least spectral energy information indicative of the sharpened video sequence.

9. (Original) The system of claim 8, wherein said optimizing means further includes:

means for calculating spectral energy information indicative of the sharpened video sequence;

means for calculating spectral energy information in said original video sequence;

means for calculating false edge information data in said sharpened video sequence; and

means for deriving an objective sharpness metric from said spectral energy information and said false edge information, said objective sharpness metric providing an objective sharpness quality score representative of the quality of said sharpened video sequence.

10. (Currently Amended) A computer-readable medium comprising instructions which when executed on a processor, cause the processor to perform a method for deriving an objective sharpness metric for determining the sharpness quality level of video sequences having different degrees of sharpness, the method comprising the following steps:

receiving as an input an original video sequence;

processing the original video sequence to derive a sharpness video sequence;

calculating spectral energy information in [[a]] said sharpened video sequence for which a sharpness quality score is desired~~, said sharpness video sequence being derived from an original video sequence~~;

calculating spectral energy information in said original video sequence;

calculating false edge information data in said sharpened video sequence; and

deriving said objective sharpness metric from said spectral energy information and said false edge information, said objective sharpness metric providing an objective sharpness quality score representative of the quality of said sharpened video sequence.

11. (New) The computer-readable medium of claim 10, wherein the step of calculating false edge information in said sharpened video sequence further comprises calculating a total number of false edges in said sharpened video sequence.

12. (New) The computer-readable medium of claim 11, wherein said step of calculating the total number of false edges in said sharpened video sequence comprises the steps of:

determining whether said number of false edges exceeds a first threshold; and

computing said sharpness quality score from said spectral energy information and said total number of false edges.

13. (New) The computer-readable medium of claim 11, wherein the step of calculating said total number of false edges in said sharpened video sequence, further comprises the steps of:

creating a first edge map in said original video sequence;

creating a second edge map in said sharpened video sequence; and

comparing said first and second edge maps to determine said total number of false edges in said sharpened video sequence.

14. (New) The computer-readable medium of claim 10, wherein the step of calculating spectral energy information in said original sequence further comprises the steps of:

determining the frequency spectrum of said original video sequence; and

computing a normalized fourier transform of said original video sequence from said frequency spectrum.

15. (New) The computer-readable medium of claim 10, wherein the step of calculating spectral energy information in said sharpened sequence further comprises the steps of:

determining the frequency spectrum of said sharpened video sequence;

dividing the frequency spectrum into at least a first and a second sub-band;

computing a first normalized fourier transform of said sharpened video sequence in said at least first sub-band;

computing a second normalized fourier transform of said sharpened video sequence in said at least second sub-band; and

using said first and second normalized fourier transforms to derive said objective sharpness metric.

16. (New) The computer-readable medium of claim 15, wherein the first and second fourier transforms are one of a horizontal and vertical transform.